

714 *Bradley (W. L.)*

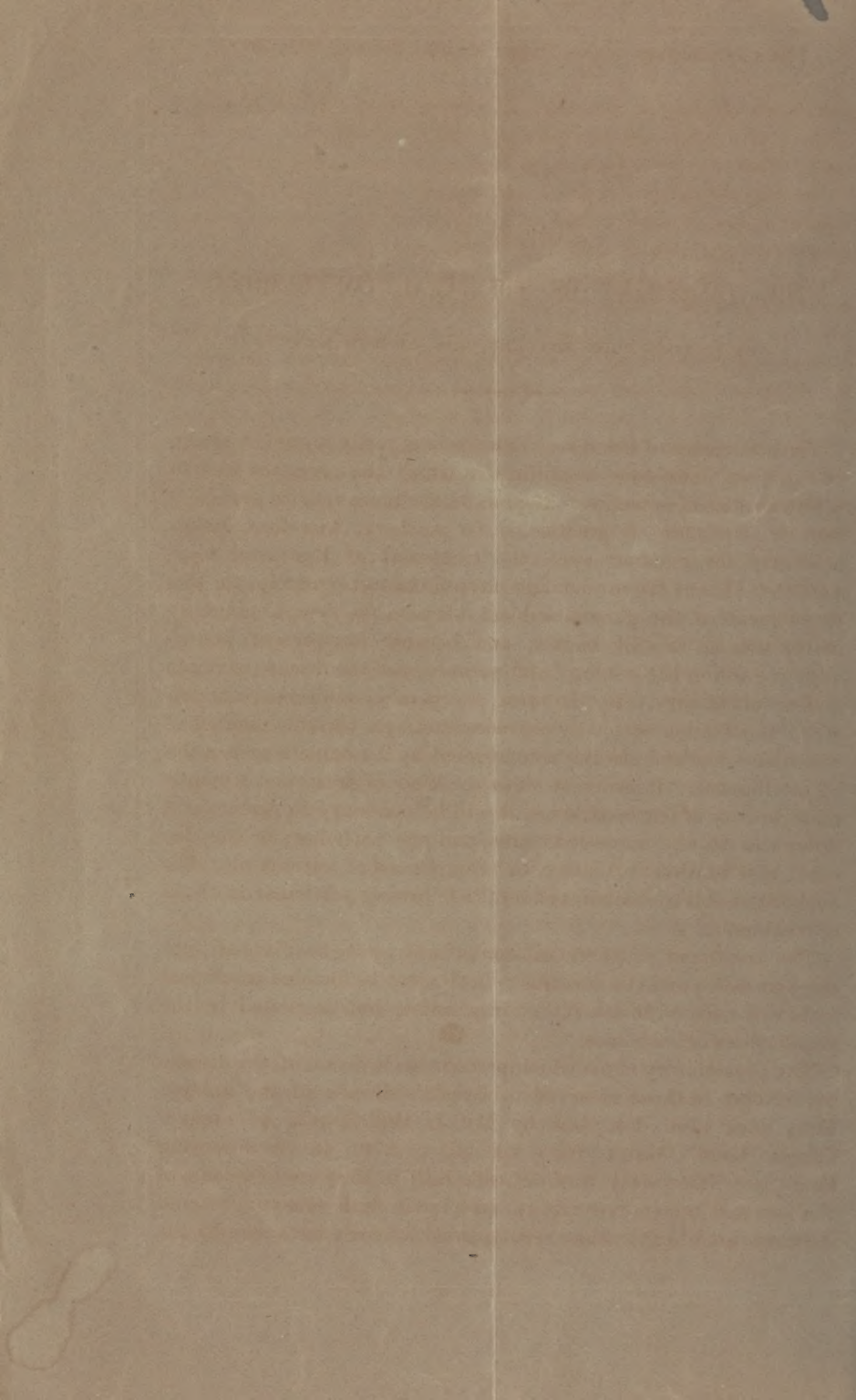
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THE TREATMENT  
OF  
PUERPERAL CONVULSIONS.

BY W. LOCKWOOD BRADLEY, M.D.,  
DEMONSTRATOR OF ANATOMY IN YALE COLLEGE.



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ARTICLE V.

THE TREATMENT OF PUERPERAL CONVULSIONS.

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The occurrence of Puerperal Eclampsia is justly regarded as one of the most dangerous conditions to which the pregnant woman is liable; and in none does the practitioner more require the aid of settled principles of practice. No apology, therefore, seems necessary for a paper upon the treatment of Puerperal Convulsions. I am led to confine myself almost entirely to this department of the general subject, because the symptomatology of the disease is well known, and because our present knowledge regarding the etiology and pathology of the disease is vague and unsatisfactory. By the term puerperal convulsions is understood an affection especially characterized by a variable number of convulsive fits, and always accompanied by a complete suspension of intelligence. In order to show the kind of treatment which is most worthy of our confidence, it will be necessary to make slight references to the supposed causes and the pathology of the disease; also to direct attention to the opinions of various obstetric authorities and to statistics of results following particular methods of treatment.

The treatment of puerperal convulsions may be divided into the *preventive* and the *curative*; both must be founded on clinical facts and reduced to set rules for practice, but regulated by the peculiarities of each case.

The premonitory signs which precede an invasion of the disease are similar to those observed in Bright's disease of the kidney. They have been described by Dr. J. Hall Davis, of London (Trans. Lond. Obstet. Soc., vol. xi, p. 270), in the following language: "Dropsical effusions, especially in the form of œdema of the face and upper extremities, associated with albuminuria and deficient urea in the urine, accompanied, in some instances, by the



presence of cylindrical blood-clots, casts of the uriniferous tubes, with fatty epithelium." A knowledge of these signs is necessary to an early and successful adoption of *preventive* treatment; consequently, the urine of the pregnant woman should be examined chemically and microscopically, at least once in two weeks, during the last two months of pregnancy. This is especially important in primiparæ, in those in whom there is œdema of the face, or in whose urine albumen has been present or suspected, in a previous labor or at any other time.

Having detected the presence of these signs or of well-known premonitory symptoms, we must vary our treatment according to the constitution of the individual. Moderate exercise should be enjoined, but all mental excitement should be avoided. If the patient is strong and plethoric, we must seek to overcome any tendency to congestion of the nervous centres by giving an active saline carthartic, ordering an unstimulating diet, and, in rare cases, bleeding from the arm. If, on the contrary, the patient is anæmic and weak, a mild laxative and a nutritious diet should be ordered. In both sthenic and asthenic cases we are liable to have œdema and albuminuria. These conditions should be treated by cupping or counter-irritation over the renal region, and the production of free diaphoresis. In such cases, Prof. Wm. H. Byford, of Chicago (*Treatise on Obstetrics*, p. 444, 1870), considers the wine of colchicum an invaluable remedy, and advises its administration in as full doses as the patient can bear.

With rare exceptions, albuminuria, as a sign of renal disease in cases of puerperal eclampsia, disappears entirely in a few days, or at least within a month after delivery; for this reason, Prof. Carl Braun, of Vienna, and others, advise the induction or acceleration of labor in cases where the life of the woman is placed in imminent danger by the increasing gravity of the albuminuria, and the extent of the dropsical swellings accompanied, it may be, by functional troubles of the heart and lungs. Dr. Geo. T. Elliot, in his *Obstetric Clinic*, gives two cases in which this operation was performed at the seventh month of pregnancy. In both cases the urine was almost solidified by heat and nitric acid; one woman was universally dropsical, and the other was not; both were anæmic and very weak; both improved after the delivery of the child. In one case the child was still-born; in the other, it died three weeks after delivery. As in all elective operations, imperiling the life of the mother and the child, a decision should only be

made after deliberate consultation. In making such a decision, we shall be assisted by the same considerations which, further on, will be offered for and against the induction of labor, as a method of treating the actual occurrence of convulsions. The reality of the danger, and the success of the preventive treatment, has repeatedly been proved by the occurrence of cases in which the threatening symptoms, properly treated, disappeared, but afterward, at the onset of labor, reappeared and were followed by convulsions.

The *curative* treatment of puerperal convulsions should be introduced by the adoption of certain precautionary measures; injury to the tongue should be prevented by interposing between the teeth a piece of soft pine wood, cork, or other suitable substance; the clothing should be loosened to prevent any obstacle to free circulation and respiration; the room should have a full supply of fresh air, and the movements of the patient should, as far as possible, be unrestrained. After these precautionary measures, we should adopt such of the following methods of treatment as may seem best adapted to each case.

In order to remedy any possible irritation from the accumulation of excretions in the bowels, it is recommended that a powder of calomel and jalap should be administered; or, if the patient is unable to swallow, a drop or two of croton oil placed upon the tongue is preferable. To hasten the movement of the bowels, an enema, rendered purgative by an ounce and a half or two ounces of castor oil, may be given. If necessary, which it very rarely is, the bladder should be emptied by means of a catheter. Through fear of exciting a convulsive paroxysm, all unnecessary irritation of the skin or mucous passages should be avoided. For this reason, and because of their comparative inefficiency, the application of sinapisms to the feet, and of cold to the head, are rarely employed.

Passing now to the consideration of methods of treatment which are more or less debatable, we find that nearly all obstetric authorities are agreed as to the value of bleeding when employed *locally*. M. Cazeaux would confine its employment to cases where the convulsions have followed a profuse hemorrhage. Some value it because it acts as a counter-irritant, and, also, because the quantity of blood can be accurately measured.

Regarding the employment of *general* bleeding there is great diversity of opinion. We find the late Sir James Simpson, Dr. Barnes, Dr. Carl Braun and others expressing themselves unfav-



orable to its employment; on the contrary, Drs. Churchill, Cazeaux, Pajot, Tyler Smith, J. Hall Davis and others are favorable to general bleeding. Dr. Davis says (*Trans. Lond. Obstet. Soc.*, vol. xi, p. 277): "We must resort to it freely among robust plethoric subjects. Generally, one full bleeding will suffice; rarely, when required to be repeated, is more than a second smaller bleeding called for." The opinion thus stated, is, I think, the one more generally adopted by the profession in this country and Great Britain. It is believed that bleeding relieves the circulation, lessens secondary congestion and prevents injury to the nervous centres, especially to the brain and spinal cord. If it does not immediately arrest the paroxysm, it relieves cerebral congestion, and thus shortens the period of unconsciousness which ordinarily follows the cessation of the convulsions.

It should, however, be remembered that convulsions may arise from, or be accompanied by, an anæmic condition of the brain and spinal cord; in fact, Elliot claims (*Obstetric Clinic*, p. 76) that a majority of the severe cases of eclampsia occur in patients who are anæmic, and whose subsequent histories display tendencies to hydræmia. Prof. Kussmaul, of the University of Heidelberg, and Dr. Tenner have investigated the nature and origin of epileptiform convulsions by numerous experiments upon the lower animals. While declaring (*Publication New Sydenham Soc.*, London, 1859) that a strong flow of arterial blood into the head never produces, but rather arrests, the more frightful convulsions, they do not absolutely reject venesection; on the contrary, they say that "cases but too frequently happen where a rapid abstraction of blood, especially from the external jugular vein, becomes imperative, in order to relieve the brain from congestion of venous blood with which it is surcharged, to facilitate the access of arterial blood, and to arrest an attack of apoplexy."

When, therefore, bleeding is absolutely indicated, we should guard ourselves against carrying it beyond what the case requires; at the same time remembering that, if blood-letting be timidly employed or too long delayed, the nervous centres may suffer serious injury. Of thirty-one cases reported by Dr. J. Hall Davis, eighteen were treated by blood-letting with a result of only two deaths, and one of these was by apoplexy. When venesection is to be performed, the patient should be placed in a sitting posture and the blood should be allowed to flow in a full stream, until syncope is apprehended. If the patient is feeble, and the pulse

weak and quick, we must place our reliance upon other remedies. Prof. T. Gaillard Thomas of New York, at one of his recent lectures, related a case, seen by him in consultation, where an attempt was made to diminish the flow of blood to the head by passing a bandage around the leg; the patient had previously been bled as much as seemed advisable.

In the year 1848, Dr. Richet of France first employed chloroform with success in the treatment of puerperal convulsions; in the same year, Simpson of Edinburgh experimented with it, and, at the present time its utility, at least in a large proportion of cases, is well established. It has been claimed that the necessity for bleeding will be diminished in proportion to the frequency of the administration of chloroform at an early period of the attack. On the other hand, the advocates for blood-letting, who employ chloroform as an adjuvant, argue that, in the majority of cases, the patient is not seen until several convulsions have occurred, and that frequently pulmonary congestion (indicated by lividity of face and quickened respiration) must be relieved by blood-letting before chloroform can be safely administered. The employment of chloroform will be successful for the amelioration or prevention of the convulsive paroxysms in proportion as its inhalation is commenced at an early stage of the disease. Dr. Carl Braun (*The Uræmic Convulsions of Pregnancy, Parturition and Child-bed*) reports sixteen cases treated by chloroform, all of which recovered. This is a degree of success which is certainly unparalleled, and the repetition of which can scarcely be expected; for this reason, the recommendation made by him as to the manner of administering chloroform is especially worthy of remembrance; he says that, if chloroform be not administered in time to cut short a paroxysm, as much atmospheric air as possible should be allowed to enter the lungs during the convulsive attack and the coma immediately succeeding. Under such circumstances, the respiration and the circulation are very much impeded, and we can understand how the administration of an anæsthetic would be apt to increase the difficulty to a dangerous degree. As soon, however, as the respiration becomes easy, the inhalation of chloroform should be commenced and carried to the production of complete narcosis; nothing short of this will completely arrest the convulsive manifestations. It is impossible to lay down any rule regarding the proper duration and intensity of the anæsthetic sleep. In severe cases, where the paroxysms tend to increase in force and frequency,



it should be continued for three or four hours, then suspended for a time, only to be recommenced, if convulsions are threatened. By a judicious interruption in its employment, it can be continued for twenty-four hours or longer. In certain cases bleeding is inadmissible or insufficient, and chloroform faithfully administered either does not prevent the recurrence of the convulsions, or its use is counter-indicated on principles which govern its general employment. Dr. Elliot (op. cit.) reports a case in which he was obliged to suspend its use, because the breathing suddenly stopped and the pulse ran down in a most alarming way. In such cases other remedies have been employed as adjuvants or substitutes.

During the past three years a few cases have been reported in the journals showing successful results from the employment of the hydrate of chloral. The bromide of potassium has been given in doses of a half to four drachms, both before and after delivery, and, in mild cases, with good results. The late Dr. N. B. Ives of New Haven was accustomed, in his treatment of convulsions after delivery, to rely upon the administration by enema of one drachm of tincture of stramonium; and his practice has been endorsed by the experience of other practitioners in the same place. When the attack is somewhat subsiding, it has been recommended by the highest authorities to give an opiate. Dr. Collins of Dublin would restrict its employment to cases where the paroxysms continue after delivery. Believing that opium increases cerebral congestion, Tyler Smith and Cazeaux, in common with the majority of French accoucheurs, are opposed to its employment, except in cases of anæmia or where a large amount of blood has been lost. When the administration of opium is indicated, it should be given in doses sufficient to produce a positive soporific effect.

Sometimes the comatose condition of the patient, or the rapid succession of paroxysms, prevents the administration by the mouth of opium or other remedies. These obstacles to medication are overcome by the hypodermic injection of a solution of morphia. Unlike opium, it does not produce cerebral congestion; and, as in the case of one full bleeding, we gain an additional advantage from the rapidity of its action. Since this method of treatment is comparatively new, and is not even mentioned in the leading text-books, I will give several illustrative cases.

In the year 1860, Prof. Scanzoni, of Wurtzburg, Germany, reported a case which he had successfully treated by this method: His patient, aged 21, a primipara, strong and robust, was seized



with puerperal convulsions at the commencement of labor. Four attacks occurred in two hours and three-quarters; she was then bled to about eight ounces, an enema of twenty-five drops of laudanum was given, the body was put in a warm bath, while cold irrigation was applied to the head. As opium could not be administered by the mouth, a solution of the meconate of morphia was, at three different times, injected under the skin, the whole quantity given being equivalent to ten grains of opium. Two hours after she had another attack and again one in six hours, after which there was no recurrence of the paroxysms for sixteen hours. Toward the end of this time she was delivered of a living child by means of the forceps; she then had a slight and short convulsion, after which they did not recur, and she made a good recovery.

Dr. Bossi of Germany (*Spitals Zeitung*, 1862) reports four cases treated by this method at the Lying-in Hospital at Grätz, Austria; two died and two recovered.

During the past year, three cases, in which this remedy was successfully employed, have been reported to the New Haven Medical Association. In the first case, the patient, aged twenty-two, a primipara, with feeble pulse, was delivered of a stillborn child at the seventh month of pregnancy; she was then taken with convulsions, which continued to recur with undiminished force and frequency until fourteen paroxysms had occurred, notwithstanding the administration of full doses of bromide of potassium, hydrate of chloral and chloroform by inhalation. Dr. F. L. Dibble then injected hypodermically about one-sixth of a grain of morphia, after which the convulsions ceased;\* in the second case, the injection was made by Dr. S. G. Hubbard; and in the third case by myself. To show what may be expected from this remedy, even in cases where all other treatment has failed, I will give a condensed statement of the last mentioned case.

The patient was aged eighteen, married, a primipara, strong and robust, with slight œdema of the face and hands, and the urine albuminous. Having arrived at the full term of pregnancy, she was seized in the night with vomiting, and, at about eight o'clock the next morning, I found her in a state of unconsciousness. As she was unable to swallow, a purgative enema was ordered. Three hours after she had her first convulsion. The following methods of treatment were practiced in the order mentioned: Bromide of

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\* One slight convulsion followed the injection, after which she went into a peaceful slumber, from which she did not awake for eight hours, and then made a good recovery.

potassium in dose of a half drachm, chloroform by inhalation, bleeding from the arm about half a pint; a powder of calomel and jalap was with great difficulty administered by the mouth. At five o'clock in the afternoon, the treatment pursued was seen to be ineffectual, and the convulsions, then twelve in number, were increasing in force and frequency; it was therefore determined to hasten delivery. In the course of an hour, the os was sufficiently dilated to admit of the application of forceps, and a stillborn child was delivered. During the two hours occupied in manual dilatation, the delivery of the child and the after-birth, she was kept under the influence of chloroform, and there was no convulsion; but, as soon as the womb was evacuated, she had two convulsions, one occurring soon after the other. During the following six hours she had six convulsions, making twenty in all, and this notwithstanding the administration of chloroform. She was then bled about a pint, and, as she then had two more convulsions, a sixth of a grain of sulphate of morphia in solution was injected hypodermically; she immediately became quiet, slept for three hours, had no more convulsions, and made a rapid recovery.

Of the eight cases which I have collected as having been treated by the hypodermic injection of a solution of morphia, six resulted in recovery. In one of the cases the injection was made before and in three other cases after delivery. In the remaining four the time of injection was not stated.

In two cases reported in the *London Lancet* (May 29, 1869, p. 747) the convulsions came on after delivery, and were arrested almost instantaneously by an injection hypodermically of two minims of Fleming's tincture of aconite and one-third of a grain of acetate of morphia. In both cases the patient made a rapid recovery.

As the result of clinical observation, some obstetric authorities claim that opium and other narcotics have an effect to retard labor; for this reason, those who believe that the condition of pregnancy is the first cause of the convulsions, and therefore, that its early termination is desirable, think that such remedies should not be employed until after delivery has been completed.

When, notwithstanding the employment of the methods before spoken of, the convulsions continue and increase in violence, we are brought to consider what other treatment is necessary.

The great majority of practitioners are, in a general way, favorable to an evacuation of the uterus. They say that the principal cause of eclampsia is to be sought for in a general alteration of the economy, that this alteration is due to renal congestion, which, in



turn, is caused by "the weight and pressure of the gravid uterus upon the kidneys and venous circulation, interfering with the free return of venous blood from that organ." In substantiation of this view, they claim that the convulsions usually occur in the latter part of pregnancy, when the weight and pressure is greatest; and more frequently in primiparæ, with whom the pressure of the uterus is especially great on account of the unimpaired tonicity of the abdominal walls. To this theory it has been objected, that cases have occurred where the abdomen was largely distended by a fibrous tumor of the uterus, and yet no albuminuria has resulted. In reply, it may be said, that the growth, in the case supposed, is more gradual, and, therefore, that the tonicity of the abdominal walls is more readily overcome. That the evacuation of the uterus relieves renal congestion, is also inferred from a fact already stated, namely, that the albuminuria usually entirely disappears in a few days or at most a month after delivery. This belief is based not only on theoretical grounds, but also upon the results of clinical observation. According to Prof. Carl Braun (*op. cit.*), the completion of labor causes an amelioration of the convulsions in thirty-one per cent. of the cases, their cessation in thirty-seven per cent., while in only thirty-two per cent. do they continue unchanged. It is claimed that the last mentioned percentage will be further reduced by the earlier adoption of measures to accelerate delivery. M. Cazeaux (*Treatise on Midwifery*, 1855, Am. edition, p. 746) says, "in no case in which eclampsia had existed a long time before we were called to the patient, have we found the termination of labor to put an end to the symptoms, and very rarely did it ever lessen their intensity."

Allowing, then, that there is a presumption in favor of evacuating the uterus, or, as M. Cazeaux expresses it—"in a general way, regarding the termination of labor as a favorable condition," we are led to consider the following questions. The cervix being dilated or dilatable, ought delivery to be accelerated? or, supposing it to be neither dilated nor dilatable, what measures should be adopted?

In all cases of convulsions, even where we have no evidence that labor has commenced, a vaginal examination should be made, for cases have occurred where it was supposed the labor had not commenced, and yet the practitioner, on his first examination, has found the first stage of labor completed; or in still other cases, has discovered the child lying dead outside the vulva.

Supposing that the cervix is dilated or dilatable, ought delivery to be accelerated? If the convulsive attacks are mild and are separated by long intervals, accompanied by a return of consciousness; if the dilatation is complete and the head of the child has descended deeply into the excavation; if the uterus contracts powerfully and the perineum is yielding, it is proper to wait for a natural delivery. If, on the other hand, the same conditions are present, but the uterine contractions are weak and the convulsions are increasing in force and frequency, it is better that the delivery should be accelerated by means of the forceps. Should this be an impossibility, because of the smallness of the pelvis or the large size of the child's head, we may practice turning or even craniotomy. Breech presentations are to be advanced in the usual way by manual aid, followed by a prompt application of forceps.

In all the operations just spoken of, and in those to be mentioned hereafter, chloroform should be employed. It is useful in relaxing the tissues and also as a remedy for the eclampsia. By its aid we are enabled to safely practice manual dilatation in cases where the cervix is yielding, but not fully dilated, and also with safety to adopt early instrumental interference. Dr. Cappie of Edinburgh (*Edinburgh Med. Jour.*, Oct., 1868) has published three cases illustrating the truthfulness of this statement. He says, "in not one of the cases was either the frequency or the severity of the paroxysms in the least affected by the attempts to dilate the os with the finger, or by the still more severe process of dragging the head against its inner surface, and, at the same time, pushing back its edges with some degree of force." Prof. Brickell, of the New Orleans School of Medicine, writing on this subject (*New Orleans Journal of Medicine*, Jan., 1868), says "I have performed manual dilatation again and again, and have never seen the least evil result."

Again, supposing that the cervix is not dilated, and that we have tried manual dilatation without success, and that the convulsions continue, notwithstanding the remedial treatment, what further measures should be adopted? Under the circumstances suggested, cases have occurred where the escape of the amniotic water has diminished the force and frequency of the convulsions; for this reason, M. Cazeaux, Tyler Smith, J. Hall Davis, and others, advise the rupture of the membranes in cases where it is believed the womb is abnormally distended; "otherwise," says Davis (*Trans. Lond. Obstet. Soc.*, vol. xi, p. 280), rupture of the mem-



branes should be avoided as a first measure, as being calculated to interfere with the easy progress of labor, and certainly to render turning more difficult, should it become necessary." If it is decided not to rupture the membranes, or if the escape of the water has not alleviated the convulsions, M. Cazeaux (*Treatise on Midwifery*, p. 746) would recommend a forced delivery, provided the uterine contractions are naturally present, or have been developed prematurely or spontaneously, under the influence of the general convulsions; but if the womb is inert, he is opposed to the operation on the ground "that the time required for the abortive (or premature) measures to act, and for the expulsion of the product of conception, exceeds by far the ordinary duration of eclampsia, and the woman would be either dead or cured before the influence could be felt." Since M. Cazeaux wrote, nearly seventeen years have elapsed, and the objection which he offered has lost nearly all its weight, for, by means of Barnes' dilator, we are allowed to anticipate a very rapid dilatation of the cervix within a few hours. Dr. Robert Barnes, of London, after whom the dilator was named, says (*Lectures on Obstetric Operations*, Lond., 1871, p. 373): "By its (the dilator's) aid it is very possible, in many cases, to expand the cervix sufficiently to admit of delivery within an hour, although generally it is necessary to expend more time. I have completed delivery in five hours, in four hours, and even in one hour from the commencement of any proceeding. In many cases of placenta prævia, when there was scarcely any cervical dilatation, I have effected full dilatation in half an hour." Dr. J. Hall Davis (*Trans. Lond. Obstet. Soc.*, vol. xi, p. 280), writing fourteen years later than Cazeaux, expresses the opinion that, under the circumstances now being considered, parturition should be induced and furthered by means of Barnes' dilator; and he gives a case in which, by this method, he induced labor at the sixth and a half months of pregnancy. In the course of twelve hours the labor was completed, and the patient quickly recovered her former state of health. Dr. Geo. T. Elliot, of New York, writing a year earlier than Davis, says in his *Obstetric Clinic* (p. 39) that "when the fœtus is not viable, we must wait until the mother's life is actually endangered by successive attacks of eclampsia." In the same book, but entirely disconnected with the opinion just quoted, he has published two cases in which labor was induced between the sixth and seventh months of pregnancy. In neither case did the patient recover.

Scattered through the same publication, I have found ten other cases, in which labor was induced between the seventh month and the full term of pregnancy. In thirty-three per cent. of these cases the patient recovered. If the Barnes' dilator, which was used in only four out of ten instances, had been employed in a larger proportion of the cases, the result would probably have been more favorable. Taking the percentage of successful cases as it stands, I think it justifies the induction of labor as a last resort in cases where the life of the woman is greatly imperilled by the occurrence of puerperal eclampsia. It is true that Prof. Hodge, of Philadelphia (*The Principles and Practice of Obstetrics*, Phil., 1864), informs us that he "has had many cases where the mother has been preserved and the infant born alive some days or months after severe and continued convulsions;" but it is equally true that many women have died undelivered. If a fatal termination has followed procrastination in inducing labor, it has also resulted from over haste or want of precaution in the mode of proceeding. In a word, there is no common rule; but we must be guided in each case by a careful consideration of the circumstances. If labor is to be induced, Dr. Barnes advises that it be done slowly and deliberately, and by a method involving the least manual or other operative interference. Such a mode of procedure is described by him (*op. cit.*) in the following language: "It is better to puncture the membranes. This at once lessens the bulk of the uterus, and diminishes the pressure upon the abdominal vessels. If the convulsions remit, we may leave the labor to nature. If urgent symptoms persist, we may dilate the cervix carefully by the cervical dilators."

The evacuation of the uterus may be accelerated by forceps, by turning, or even by craniotomy. Elliot (*op. cit.*, p. 55) gives a case in which the os was so rigid that he was unable to dilate it by means of Barnes' dilator and the warm douche further than to admit the points of three fingers, and was obliged to perform craniotomy; the patient recovered. In a second case (*op. cit.*, p. 125) the child was dead, and he performed the operation to give a slight chance of life to the mother. Dr. Churchill, of Dublin (*Theory and Practice of Midwifery*, Lond., 1860, p. 505), reported a case in which he felt that the patient would probably die before the completion of labor naturally, and he therefore perforated and extracted the child, and the patient recovered, after an insensibility lasting nearly three days. Prof. Hodge (*op. cit.*, p. 448) believes that perforation should be "restricted to cases of



deformity of the pelvis, or of the child, and, perhaps, to a few instances where the child is dead."

Incision of the cervix may be required in certain cases where there is rigidity from alteration of the tissue, as œdema, hypertrophy, and cicatrix. M. Cazeaux would limit their employment to cases where the internal orifice and upper part of the cervix have been dilated either by the progress of gestation or premature contraction.

After delivery, the accoucheur should take special pains to assure himself that the womb is well contracted, and that it contains no coagula, or portions of the membrane or placenta. Finally, in anticipation of returning consciousness, the room should be darkened, and perfect rest should be enjoined. This is especially important, because the cessation of the convulsions is peculiarly liable to be followed by mania, pulmonary congestion, and various forms of pelvic and abdominal inflammation.

It will, perhaps, be noticed that in the course of my paper I have not referred to the child, and for this reason: Knowing that half the children born during or after puerperal convulsions are dead, I believe that there will be a better chance for the life of the child the sooner it is removed from the influence of uræmic poisoning, or the convulsive action of the uterus; but I am also of the opinion that, when the life of the mother is in such imminent danger, considerations for the child should not be allowed to influence our treatment.

In concluding this paper, I would say that I have endeavored to give a comprehensive statement of the treatment which, at the present time, experience has proved most efficient in puerperal convulsions. When narcotics were the best remedies in the possession of the practitioner, the mortality was at least fifty per cent. Since the introduction of free bleeding, chloroform, and other remedies, the mortality has gradually diminished, and in 1863 was estimated by Prof. Hodge (*op. cit.*) to be twenty-five per cent. In the year 1870, Dr. J. Hall Davis, of London (*op. cit.*), published thirty-five cases of puerperal eclampsia, which showed a mortality of only one in eleven. What we need at the present time is not so much the introduction of new remedies as a better understanding of the principles which should govern us in the proper employment of those now in our possession. When these principles are more fully elucidated and judiciously carried out, we may hope for even more favorable results both for the mother and the child.







